HEALTH AFFAIRS

Operation Tomodachi Registry
Location-Based Radiation Dose Estimate Report
Yokosuka Naval Base, Japan;
Child less than 1 year old

Thank you for visiting the Operation Tomodachi Registry website and obtaining a location-based radiation dose estimate report. On March 11, 2011, a 9.0 magnitude earthquake occurred northeast of Tokyo off the coast of Honshu Island. Approximately 40 minutes following the earthquake, a large tsunami reached the coast of Japan. The earthquake and tsunami damaged the Fukushima Daiichi Nuclear Power Station located 150 miles northeast of Tokyo and resulted in the release of radioactive material, including radioactive iodine, into the environment.

As one of many measures taken to ensure your health, the Department of Defense estimated whole-body and thyroid radiation doses to Department of Defense-affiliated individuals in 13 shore-based locations of Japan over the period from March 12, 2011 to May 11, 2011. Thyroid doses were specifically assessed because the thyroid takes up and stores iodine, so it is particularly vulnerable to the effects of radioactive iodine.

YOUR DOSE ESTIMATES

Based on the location and the age group you selected, Yokosuka Naval Base, Japan; Child less than 1 year old, your radiation dose estimates for the 60-day period are:

Whole-Body Radiation Dose: 0.063 rem

Thyroid Radiation Dose: 0.99 rem

These dose estimates represent your potential radiation dose if you were present at Yokosuka Naval Base or any of its associated locations: Azuma Storage Area, Ikego Housing Area and Navy Annex, Kisarazu Auxiliary, Landing Field, Naval Transmitter Station Totsuka, Negishi Dependent Housing Area, Tomioka Storage Area, Tsurumi POL Depot, U.S. Fleet Activities Yokosuka, Urago Ammunition Depot, and Yokohama North Dock during the 60-day period.

These estimates were calculated based on you spending 24 hours outdoors, having a constantly high physical activity level (and associated breathing rates), and being exposed to the radiation measured in the air, water and soil over the entire 60-day period. Your actual radiation doses are expected to be lower due to the protection afforded by being indoors and lower levels of physical activity for much of this time. To see what these doses mean to your health and how your whole-body and thyroid dose estimates compare to other common radiation exposures, please see the charts on the following page.

WHAT DOES THIS MEAN TO YOUR HEALTH?

Your whole-body and thyroid radiation dose estimates are well below levels associated with adverse medical conditions. Since the estimated radiation doses and health risks associated with this event are so low, no one is being placed in a medical surveillance program to monitor their long-term health outcomes. If you have medical concerns, please discuss these results with your health care provider.

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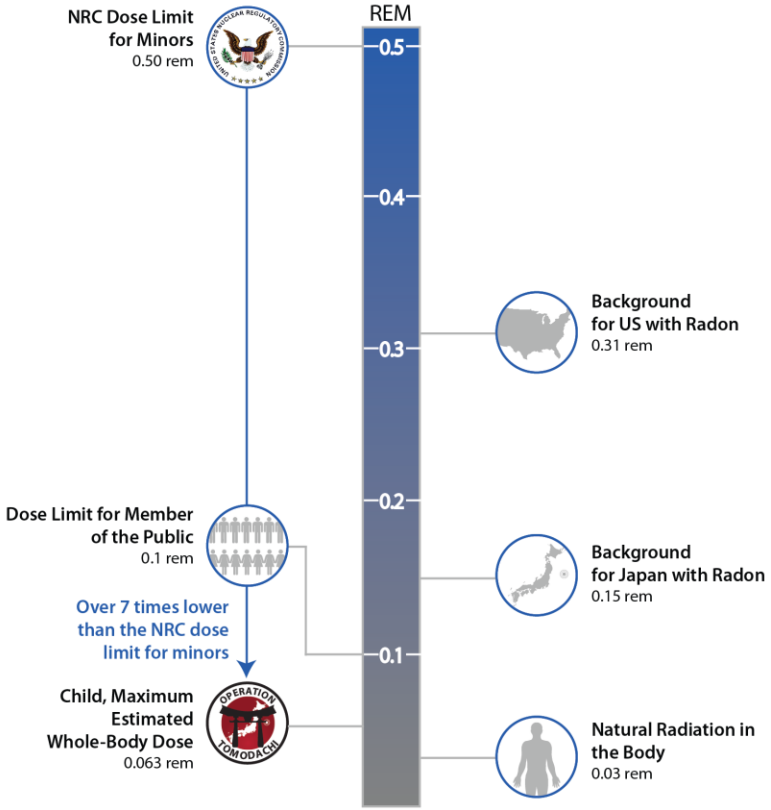
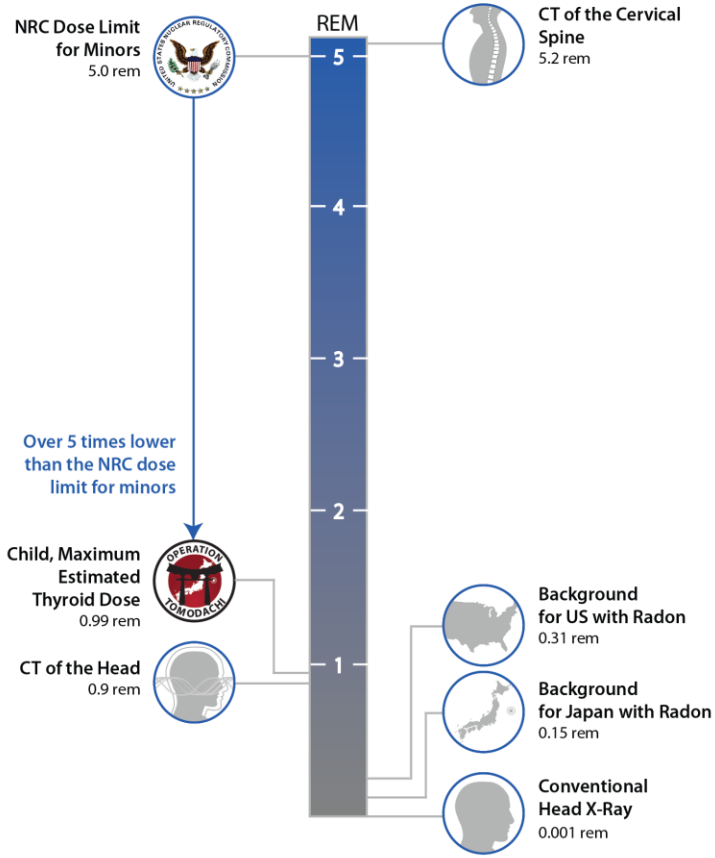
RADIATION DOSE IN PERSPECTIVE

The following charts provide you with a comparison between the Operation Tomodachi radiation dose estimates and other radiation doses from common radiation sources, both natural and manmade. All doses reflect yearly doses except for the medical procedures shown below, which reflect the dose received each time the procedure is performed.

Child, Whole-Body Doses
Individuals 0 to 1 years of age



Child, Thyroid Doses
Individuals 0 to 1 years of age



The medical procedures included in this graph were selected because of their proximity to and dose delivered to the thyroid.

ABOUT THE DOSE CALCULATIONS

Your estimated radiation dose calculations include contributions from both external radiation sources outside the body and internal radiation from radioactive particles taken into the body through breathing, eating, and drinking. The data supporting the calculations were collected by the U.S. Department of Defense, U.S. Department of Energy, as well as Japanese government and private organizations. The calculations were performed by senior radiation health experts from the Department of Defense using International Commission on Radiological Protection methods. The dose calculations are under review by the National Council on Radiation Protection and Measurements, a well respected non-governmental scientific agency.

For additional information related to the dose calculations, please visit the Frequently Asked Questions section within the Operation Tomodachi Registry area of the Environmental Health Surveillance Registries website http://registry.csd.disa.mil/otr. For specific questions regarding your whole-body or thyroid radiation dose estimates, including how they were calculated, please contact the Registry staff by using the Contact Us link on the website.

SOURCES OF INFORMATION ON RADIATION AND RELATED HEALTH EFFECTS

Centers for Disease Control and Prevention, http://www.cdc.gov/nceh/radiation/default.htm

Health Physics Society, Radiation Risk in Perspective, http://hps.org/documents/radiationrisk.pdf (2004).

Johnson, T. and Birky, B. Health Physics and Radiological Health, 4th Edition, Lippincott Williams & Wilkins (2012).

National Council on Radiation Protection and Measurements, Report 160: Ionizing Radiation Exposure of the Population of United States (2009).

U.S. Environmental Protection Agency, http://www.epa.gov/radiation/

U.S. Nuclear Regulatory Commission, http://www.nrc.gov/about-nrc/radiation/rad-health-effects.html

Version 1.0 – Original report

Version 1.1 – Modified text to clarify nature of dose estimates

Version 1.2 – Added text to identify associated locations. Modified text to clarify nature of example doses presented on graphic. Added version history.